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A NEW SPECIES OF JUSTICIA FROM FLORIDA

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A rich collection of plants gathered in the southeastern United States by John K. Small and co-workers has lain in storage at The New York Botanical Garden for about twenty-five to forty or more years. It has suffered moderately from the ravages of time and neglect. The specimens were originally well-prepared and duplications are frequently ample. Unfortunately they are unnamed and they are often without collection-number or label, and the field-data is poor.

Through the support of George R. Cooley, and the intermediation of Bassett Maguire, it is now possible to process this material so that it can be placed in circulation. The first set will be deposited in the herbarium of The New York Botanical Garden.

The first author has been assigned the task of preparing this long-neglected "Small Collection" for herbaria. He is not studying it taxonomically, but in the way of naming he is merely suggesting the genus for each specimen so that it can be filed in the proper approximate position in the herbarium. Naturally, it is impossible to shut the eyes of a taxonomist completely. Instances of apparently new state-records were seen: e.g. *Oxytropis Lambertii* Pursh var. *abbreviata* (Greene) Barneby and *Senecio platensis* Nutt from Louisiana, determined by Rupert Barneby and Theodore Barkley, respectively; *Rhynchosia galactioides* (Nutt.) Endl. from Apalachicola, Florida. There was revealed a good ample collection of *Clitoria fragrans* Small bearing locality and date of collection identical with those given for the type. As hitherto there was neither type nor any other specimen of this species

in the herbarium of The New York Botanical Garden (at least since 1945), the discovery is important. Quite astonishing too was the discovery of a species of *Nyssa* from the Florida Keys! It is a fruiting specimen with coriaceous narrow leaf-blades suggesting an extreme form of *N. biflora* Walt., or *N. ursina* Small. The label reads: J. K. Small and N. L. Britton, hammock, Lignum Vitae Key, Monroe County, December 13, 1919.

The most interesting discovery was the new species of *Justicia* published herewith. One of the old collections, *Small 12682*, although clearly a *Justicia*, did not appear to be known from Florida. Search in the herbarium revealed its identity with *Cooley 5481* from the same area. Comparisons with other material also proved that the species was undoubtedly a novelty for Florida, and subsequently Mr. Leonard ascertained it to be altogether new to science and he supplied the accompanying description. It is named in honor of George R. Cooley, not only for his collection of the type, but mainly in acknowledgment of his continued generous support both in the present and in other work dealing with the flora of the southeastern United States. The illustration was drawn by Dorothy H. Marsh under the supervision of Carroll Wood at Harvard University from preserved material collected at the same time as *Cooley 6334*.

Justicia Cooleyi Monachino & Leonard, sp. nov.

Herba erecta vel ascendens, usque ad 40 cm. alta, caulibus ramosis, subquadrangularibus vel basi teretibus, 2 mm. crassis, pilis plus minusve bifariam pilosis, pilis retrorsis vel aliquando patulis, usque ad 0.75 mm. longis, albidis; laminae foliorum oblongo-ovatae, usque ad 7.5 cm. longae et 3 latae, apice breviter acuminatae (apice ipso subobtusos), basi acutae, in petiolum decurrentes, submembranaceae, integrae, parce vel mediocriter pilosae, pilis usque ad 1 mm. longis, albidis, costa et venis (3- vel 4- paribus) et venulis crasse reticulatis aliquando prominentibus, cystolithis obscuris; petioli usque ad 1.5 cm. longi, dense pilosi, pilis rectis et patulis vel curvatis, usque ad 1 mm. longis; spicae erectae vel ascendentes, usque ad 6 cm. longae, laxae, rectae vel leviter curvatae, internodiis usque ad 13 mm. longis, puberulis, pilis patulis vel retrorsis, 0.13 ad 0.32 mm. longis, pilis alteris longioribus glandulosis, paniculam terminalem formantes, pedunculis usque ad 23 mm. longis, teretibus, puberulis, pilis brevioribus eglandulosis et pilis longioribus glandulosis intermixtis; flores sessiles; bractae lineares, 2.5-3 mm. longae, 0.5-0.75 mm. latae, acutae, costa prominente, intus glabrae, ex-

terne pilosae, pilis 0.18–0.48 mm. longis, paucis, aliquando glandulosis; bracteolae bracteis similes; calycis segmenta 4, lanceolata, 5 mm. longa, 1 mm. lata, apice subacuta, intus glabra, externe pilosa, pilis patulis vel ascendentibus, pilis eglandulosis et glandulosis intermixtis; corolla 7–8 mm. longa, externe parce pilosa, pilis usque ad 0.16 mm. longis, patulis, intus glabra, pallide purpurea, labio inferiore intus fusco-purpureo, medio oblique albido vittato excepto, tubo 4.5 mm. long, basi 1.5 mm. lato, apice 2.5 mm. lato, labio superiore erecto, ovato, ca. 0.3 mm. longo, basi 2 mm. lato, apice angustato, labio inferiore trilobato, patulo, 4 mm. longo, lobis rotundatis, 2 mm. longis, 1.5 mm. latis, marginibus plus minusve crispatis; stamina supra orem tubi corollae ca. 3 mm. exserta, lobis antherarum 0.75 longis, superpositis, obliquis, connectivo 0.25 mm. longo, lobo inferiore caudato, cauda plana, spathulata, ca. 0.5 mm. longa; capsulae clavatae, 12 mm. longae, 3 mm. latae, ca. 1 mm. crassae, hirtellae, pilis rigidis, retrorsis, usque ad 0.25 mm. longis, pilis eglandulosis et glandulosis intermixtis; retinacula curvata, 2 mm. longa, 0.25 mm. lata, apice tenuia, truncata, erosa, nitida; semina plana orbiculata, ca. 2 mm. diam., villosa, pilis patulis, usque ad 0.32 mm. longis, apice ancoraeformi.



FIG. 1. *Justicia Cooleyi* Monachino & Leonard. a, flower and bud, lateral view, $\times 4$; b, opened corolla with one stamen removed, $\times 4$; c, stamen (portion of filament omitted, $\times 10$); d, immature fruit and flower from which corolla has fallen, $\times 2$.

Type in the Herbarium of the New York Botanical Garden, collected in a wet woods on Indian Hill, two miles nw. of Chinsegut Hill, Hernando Co., Florida, November 20, 1957, by George R. Cooley (No. 5481). Paratypes: Low hammock near Mascotte, Lake County, Florida, December 4, 1925, *John K. Small 12682* (NY, US); Brooksville, Hernando Co., Florida, September 5, 1934, *Small, West & McFarlin s.n.* (NY); common in high hammock on Indian Hill, two miles nw. of Chinsegut Hill, Hernando Co., Florida, December 1, 1958, *George R. Cooley 6337* (NY). Carroll Wood informs us that another sheet of the same

plant in the Gray Herbarium is from "roadside on US 98, 2.7 mi. north of Brooksville, Hernando Co., Florida, Ray Garrett, 11 Aug. 1953."

Justicia Cooleyi differs from *J. ovata* (Walt.) Lindau, which it superficially resembles, and can be easily separated by the thinner leaf blades, these regularly oblong-ovate; by the dense, spreading or retrorse pilosity of the entire plant with more or less of the hairs gland-tipped; by the dark velvety color of the inner surface of the lower lip of the corolla; and by the densely villous seeds, their hairs anchor-tipped.

The true relationship of *Justice Cooleyi* is, however with *Justicia Pringlei* Rob., of Mexico, and *Justicia galapagana* Lindau, of the Galapagos Islands, Ecuador. These three species are extremely close, having in common the ovate to oblong leaf blades, the secund flowers, the mixed glandular and eglandular hairs more or less clothing the entire plant, and the anchor-tipped hairs of the seeds. Compared with *J. Pringlei* the leaf blades of that species are usually smaller, averaging about 3 cm. in length, the spikes are more spreading, shorter, (averaging 3 cm.) with the rachis hairs practically all gland-tipped and the corolla deep lilac instead of purple. The spreading hairs of the stems are usually more numerous and longer (up to 2.5 mm. long). In *J. galapagana* the corolla is broader, the spikelets fewer, shorter, usually producing only 3 flowers instead of 6, and more heavily and densely glandular puberulous. Lindau, in his description of *J. galapagana*, states that the seeds are smooth (laevis) and brown-tomentose in contrast with those of *J. Pringlei* which are foveolate and pubescent. The seeds of *J. Cooleyi* are pilose with spreading whitish hairs arising from thickened papilliform bases. This series of *Justicia* deserves further study with more abundant material available.

Writing from Chinsegut Hill near Brooksville, the type locality of the endemic *Campanula Robinsiae* Small, and making reference to the precise geographical station of the type of *Justicia Cooleyi*, George R. Cooley provided the following information: where Sections 15, 16, 21, and 22, T 21S, R 19E, meet, the land rises from an elevation of 100' toward the east to a height of 240', dropping to 80' one-half mile to the west. This rise is locally

known as Indian Hill. It is part of a great area of broad-leaved trees known as Annutteliga or Annuttalagga Hammock. Lime-rock mining has destroyed almost all of this extensive wood in which John K. Small and the St. John's found many endemic plants, particularly ferns. In the hammock on Indian Hill evidences can be found of lumbering operations many years ago. Probably this wood has been untouched for thirty years. Oaks, hickories, magnolias, and sweet gum trees predominate. Lower trees include *Ostrya* and *Carpinus*. The undercover is rather dense and in places is the result of earlier clearings. Perhaps the most abundant of the shrubby plants is *Ilex vomitoria* Ait., the Yaupon. Among the grasses and herbs grows *Justicia* attracting attention by its small rich purple flowers. Rarely more than three or four blossoms appear on a plant at one time and usually scattered. The flowering season is long, at least from November to March. — The New York Botanical Garden, New York and U. S. National Museum, Washington.

TWO CRUCIFERS NEW TO ESSEX COUNTY, MASSACHUSETTS. During September 1958 I found two uncommon introduced crucifers which were new to the county flora. *Alliaria officinalis* Andrz. has not yet become abundant in New England. It is well established in the plantings around the mansion of the Crane Estate on Castle Hill in Ipswich with *Galium verum* L. which is not common in the country. Castle Hill, Ipswich, Francis C. Wade and Stuart K. Harris 18784 (26 September 1958).

The extensive dump off the Salem Turnpike in Saugus contains a large number of garden escapes and adventive weeds. Here I found a few plants of *Rapistrum rugosum* (L.) All. which has a curious transversely two-jointed silique, the upper joint being almost spherical and bearing eight longitudinal ribs while the lower joint is much smaller, unribbed and looks like a peduncle. The species was previously known from Massachusetts from two specimens collected in the 1880's on the old ballast flats in South Boston. Dump off Salem Turnpike, Saugus, Stuart K. Harris 18716 (16 September 1958).

Specimens have been deposited in the herbarium of the New England Botanical Club.—STUART K. HARRIS, BOSTON UNIVERSITY